Are more city dwellers caught drink driving than country folk? An analysis by random breath testing apprehension rates.

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Abstract

Background
Random Breath Testing (RBT) remains a central enforcement strategy to deter and apprehend drink drivers in Queensland (Australia). Despite this, there is little published research regarding the exact drink driving apprehension rates across the state as measured through RBT activities.

Aims
The aim of the current study was to examine the prevalence of apprehending drink drivers in urban versus rural areas.

Methods
The Queensland Police Service provided data relating to the number of RBT conducted and apprehensions for the period 1 January 2000 to 31 December 2011.

Results
In the period, 35,082,386 random breath tests (both mobile and stationary) were conducted in Queensland which resulted in 248,173 individuals being apprehended for drink driving offences. Overall drink driving apprehension rates appear to have decreased across time. Close examination of the data revealed that the highest proportion of drink driving apprehensions (when compared with RBT testing rates) was in the Northern and Far Northern regions of Queensland (e.g., rural areas). In contrast, the lowest proportions were observed within the two Brisbane metropolitan regions (e.g., urban areas). However, differences in enforcement styles across the urban and rural regions need to be considered.

Discussion and conclusions
The research presentation will further outline the major findings of the study in regards to maximising the efficiency of RBT operations both within urban and rural areas of Queensland, Australia.

Introduction

Drink driving continues to be a major cause of death and injury on Australian roads. Analysis of crash data from 2006 found alcohol to be a factor in approximately one-third of all road traffic deaths (BITRE, 2011) and that alcohol and/or drug use was a factor in over half (52%)

of fatal sole occupant, single vehicle crashes (BITRE, 2011). Internationally it has been recognised that establishing Blood Alcohol Concentration (BAC) limits of 0.05g/dl or below in combination with RBT operations are an effective method by which to reduce the number of alcohol-related crashes (WHO, 2013). The use of checkpoints and RBT can lead to significant reductions in alcohol-related crashes and have been shown to be very cost-effective method to reduce alcohol related road trauma (WHO, 2013).

RBT operations commenced in Australia when this approach was first introduced in Victoria in 1976. Across Australia, a BAC of 0.05g/100mL (or 0.05 per cent) has been set as the legal limit for full licence holders, with lower rates applicable for other drivers: zero for learner drivers and provisional drivers. When conducting RBT operations, police officers randomly stop motorists to obtain an initial analysis of their breath via a hand held device to determine whether they have consumed more alcohol than is legally permitted to operate a motor vehicle. Subsequent tests confirm the degree to which alcohol is present. Since the introduction of RBT, a 55% reduction in the number of crash fatalities occurring in Queensland has been observed despite the considerable growth in population during this time (BITRE 2102). The use of RBT programs is regarded as contributing greatly to this decline.

In Australia there is general support for harsh penalties for drink drivers (AIHW, 2005; AIHW, 2008; Hommel, 1990). However, for many motorists, possible apprehension by police does not deter them from drink driving despite recent exposure to RBT operations (Watson & Freeman, 2009). It is of interest to note that research has found that the drivers most likely to believe that they have a low risk of being apprehended for drink driving are males under thirty years of age and rural drivers (Harrison & Pronk, 1998). Indeed, drink-driving offenders in rural areas have reported a preference for changing their driving habits rather than change their drinking habits to avoid detection in the future (Ferguson, Schonfeld, & Sheehan, 1999). In addition, surveys of drivers in rural areas indicate relatively low levels of support in regards to the perceived effectiveness of RBT operations (Sheehan et al., 2008).

Generally driving behaviours in rural and remote regions have not received the same degree of scrutiny as that of urban motorists, despite evidence that drivers in these regions have a greater risk of involvement in a crash. A recent study from the United States found that fatal crashes in rural areas accounted over half (56%) of all traffic fatalities in 2006 despite the fact that at that time less than a quarter (23%) of the population lived in rural areas (population centres below 50,000 inhabitants) (National Highway Traffic Safety Administration, 2007). In Australia, the proportion road deaths occurring in rural and remote areas increased noticeably in the period between 1992 and 2006 (FORS, 1996; Australian Transport Council, 2011). While a number of contributory factors may explain findings such as these, including road conditions and higher speed limits, a greater willingness to engage in risk-taking behaviours does appear to be a factor in the comparatively large proportion of crashes on rural roads. Drivers in rural areas have been found to have strong associations with crashes involving high levels of alcohol consumption, excessive speed and a failure to wear seat belts (Pettitt, Baade, Low Choy, Darnell & Haynes, 1994; Sahai et al., Sahai, Pitbaldo, Bota & Rowe, 1998; Hasson, 1999; Tziotis, Mabbott, Edmonston, Sheehan & Dwyer, 2005; National Highway Traffic Safety Administration, 2008).

For many Australians, the consumption of alcohol is an integral part of their lives, with up to ten percent of Queenslanders drinking alcohol daily (DTMR, 2010). In fact the rate of alcohol

related deaths and hospitalisations are higher in Queensland than in most other parts of Australia (DTMR, 2010). Regular and excessive drinking of alcohol can be particularly prevalent in many rural communities (Sheehan, Schonfeld, & Davey, 1995; Sheehan et al., 2008). In a major study of crashes, driver attitudes and behaviours in rural and remote areas in North Queensland (Sheehan et al., 2008) problem drinking and alcohol involvement were found to be a major contributor to crashes in this region. Driver related factors were found to contribute to crashes to a much greater extent than environmental factors, with a majority of crashes involving single vehicles and occurring in relatively good road and climatic conditions (Sheehan et al., 2008). Alcohol was deemed to be a contributing factor in fatal crashes at approximately twice the rate of that recorded for other serious crash types (Sheehan et al., 2008). In addition, contrary to the commonly held views, the large majority of crashes involved (and caused) by locals rather than by tourists or visitors to the region (Sheehan et al., 2008).

Differences can exist between rural and urban areas in the prevention, detection and intervention of drink driving (Harrison, 1996; Sheehan et al., 2008; DTMR, 2010) with a range of social, environmental and geographical factors reflected in drink driving behaviours. These factors include: perceptions of a lower probability of detection in rural areas; a higher degree of social solidarity in many smaller rural communities; a relative scarcity of traffic enforcement personal and related support available in rural areas; traffic law enforcement tends to be more expensive on low traffic volume roads and; less alternatives to drink driving (such as public transport) are present (Elliott & Shanahan, 1983; Harrison, 1996; Travelsafe, 1999). In rural areas, police can also face problems in transporting a detained or arrested drink driver to a location with suitable breath analysis device within the two-hour time frame as required by existing protocols (DTMR, 2010).

Method and Results

The dataset contained information for all drivers stopped and processed as part of the Queensland RBT legislative framework from 1 January 2000 to 31 December 2011. The data collected occurred within the state's eight defined police regions, covering the total Queensland population of 4,349,631 (Australian Bureau of Statistics, 2011).

In the period, 35,082,386 random breath tests (both mobile and stationary) were conducted in Queensland which resulted in 248,173 individuals being apprehended for drink driving offences. Examination of data across the eight police regions over the twelve-year period shows that the prevalence of drink driving detection rates rose steadily across time, peaking in 2008 and 2009, before slightly declining. This decline was observed across all Queensland regions with any increase in annual figures reflecting the introduction of new offence types.

The highest rate of detections per number of interceptions over the period 2000 to 2011 was observed in the Northern (1:83) and Far Northern (1:85) police regions respectively (rural areas). Conversely, the lowest rate of detections was observed in the Metropolitan South (1:149) police region (urban area) (see Table 1).

Table 1: Roadside breath tests and offence detections by Queensland police region, 1January 2000 to 31 December 2011.

Police Region	No. Tests	% total tests	No. RBT offences	% total RBT offences	RBT Detection rate	Qld Population (as at 30 June 2011)	% of Qld Population
Far Northern	2,759,187	8%	32,639	10%	1:85	276,515	6%
Metropolitan North	4,918,340	14%	44,016	14%	1:112	656,725	15%
Metropolitan South	5,368,599	15%	36,146	11%	1:149	724,089	17%
North Coast	6,705,895	19%	57,152	18%	1:117	848,544	20%
Northern	2,343,446	7%	28,342	9%	1:83	282,306	7%
South Eastern	5,511,400	16%	57,624	18%	1:96	842,057	19%
Southern	4,041,794	12%	31,355	10%	1:129	513,191	12%
Central	3,433,725	10%	32,759	10%	1:105	206,204	5%
Total	35,082,386	100%	320,033	100%	1:110	4,349,631	100%

Discussion

Examination of offences by number of tests conducted revealed that regional areas such as Northern and Far Northern shows a detection rate far in excess of that observed in the far more populist, urban areas in the south east corner of Queensland such as Metropolitan South, Metropolitan North and the North Coast areas. It is of interest to further examine why the rate of detection in rural areas is higher and determine appropriate countermeasures to reduce the incidence and severity of drink driving in these communities.

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